

Rod/Piston seals

# Hallite



# 601

## TECHNICAL DETAILS

METRIC

INCH

### OPERATING CONDITIONS

MAXIMUM SPEED 1.0 m/sec  
 TEMPERATURE RANGE -45°C + 110°C  
 MAXIMUM PRESSURE 400 bar\*

3.0 ft/sec  
 -50°F + 230°F  
 6,000 p.s.i.\*

### MAXIMUM EXTRUSION GAP

PRESSURE bar	160	250	400
MAXIMUM GAP mm	0.6	0.5	0.4
PRESSURE p.s.i.	2400	3750	6000
MAXIMUM GAP in	0.024	0.020	0.016

Figures show the maximum permissible gap all on one side, for rod seals using minimum rod  $\varnothing$  and maximum clearance  $\varnothing$  and for piston seals using the minimum clearance  $\varnothing$  and maximum bore  $\varnothing$

### SURFACE ROUGHNESS

	$\mu\text{mRa}$	$\mu\text{mRt}$	$\mu\text{inCLA}$	$\mu\text{inRMS}$
DYNAMIC SEALING FACE - ROD $\varnothing d_1$	0.1 ↔ 0.4	4 max	4 ↔ 16	5 ↔ 18
STATIC SEALING FACE - ROD $\varnothing D_1$	1.6 max	10 max	63 max	70 max
DYNAMIC SEALING FACE - PISTON $\varnothing D_1$	0.1 ↔ 0.4	4 max	4 ↔ 16	5 ↔ 18
STATIC SEALING FACE - PISTON $\varnothing d_1$	1.6 max	10 max	63 max	70 max
STATIC HOUSING FACES $L_1$	3.2 max	16 max	125 max	140 max

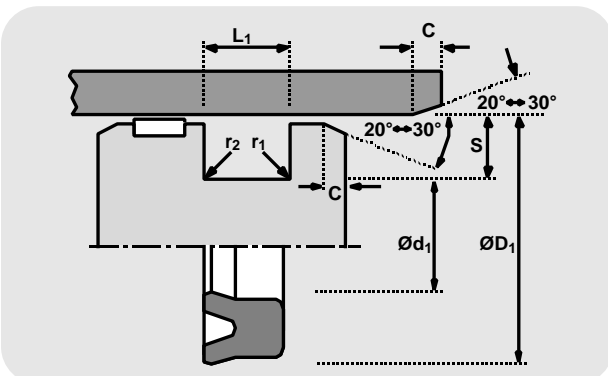
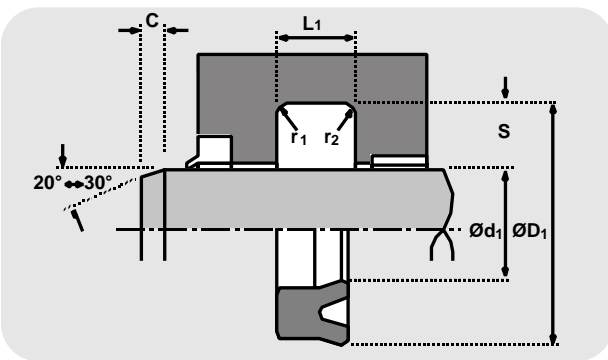
### CHAMFERS & RADII

GROOVE SECTION S mm	4.0	5.0	7.5	10.0	12.5	15.0	20.0
MIN CHAMFER C mm	3.0	3.5	5.0	6.5	7.0	8.0	10.0
MAX FILLET RAD $r_1$ mm	0.2	0.4	0.8	0.8	1.2	1.6	1.6
MAX FILLET RAD $r_2$ mm	0.4	0.8	1.2	1.2	1.6	2.4	2.4
GROOVE SECTION S in	0.125	0.187	0.250	0.312	0.375	0.500	
MIN CHAMFER C in	0.093	0.093	0.125	0.156	0.187	0.217	
MAX FILLET RAD $r_1$ in	0.008	0.008	0.016	0.032	0.032	0.032	
MAX FILLET RAD $r_2$ in	0.016	0.016	0.032	0.047	0.047	0.047	

### TOLERANCES

	$\varnothing d_1$	$\varnothing D_1$	$L_1$ mm	$L_1$ in
ROD	f9	Js11	+0.25 -0	+0.010 -0
PISTON	js11	H9	+0.25 -0	+0.010 -0

\* Pressure rating of seal can be extended to 700 bar /10,000p.s.i. with the use of a back up ring. If this option is required seek advice from your local Hallite Seals sales office.



## DESIGN

The Hallite 601 is a high performance general purpose seal suitable for rod and piston use.

Manufactured in Hythane® 181 - Hallite's 601 is engineered to effect a good seal in most industrial cylinder applications.

The sealing lips are accurately machine trimmed to ensure good low pressure sealing while the material resists extrusion at high pressures.

## FEATURES

- GENERAL PURPOSE SEAL
- EXCELLENT TEMPERATURE RESISTANCE
- EASE OF INSTALLATION

NB:

Hallite 606 is a preferred option for back to back piston applications.

Part numbers commencing 46 . . . . are designed to suit popular Asian housings.

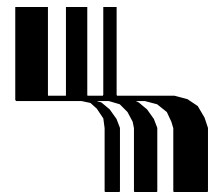
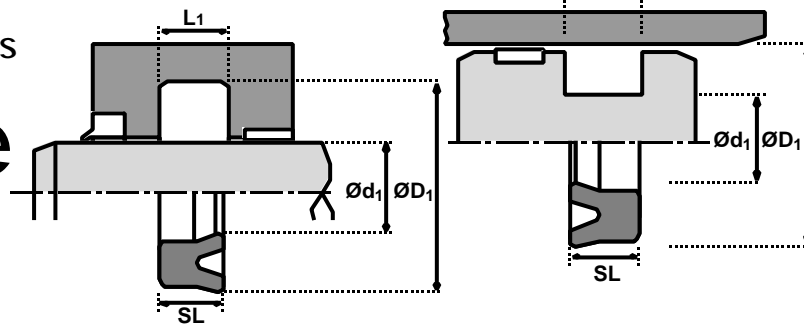
Part numbers suffixed by "‡" indicate housing sizes to meet ISO5597.

Size lists give "on line" tolerances for rod

Rod/Piston seals

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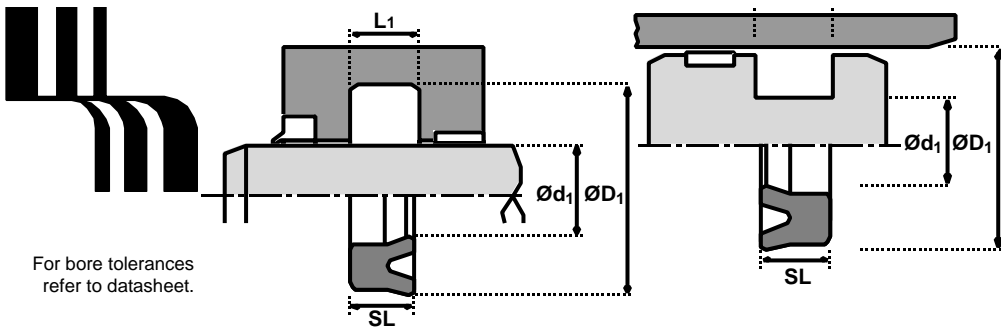
metric



For bore tolerances refer to datasheet.

Ød <sub>1</sub>	TOL f <sub>9</sub>	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
4.5	-0.010 -0.040	12.5	+0.03 -0.03	4.4	5.0	4506701
5	-0.010 -0.040	12	+0.03 -0.03	5.5	6.5	4508601
6	-0.010 -0.040	13	+0.03 -0.03	8.0	9.0	4460300
10	-0.016 -0.059	18	+0.06 -0.06	6.0	6.6	4299900
10	-0.016 -0.059	20	+0.07 -0.07	8.0	9.0	4600000
12	-0.016 -0.059	18	+0.07 -0.07	6.0	7.0	4621300
12	-0.016 -0.059	20	+0.07 -0.07	4.4	5.0	4182501‡
12	-0.016 -0.059	25	+0.07 -0.07	8.0	9.0	4600100
14	-0.016 -0.059	22	+0.07 -0.07	4.4	5.0	4182601‡
14	-0.016 -0.059	22	+0.07 -0.07	5.0	5.7	4604000
14	-0.016 -0.059	24	+0.07 -0.07	8.0	9.0	4600200
15	-0.016 -0.059	25	+0.07 -0.07	8.0	9.0	4600300
16	-0.016 -0.059	24	+0.07 -0.07	4.4	5.0	4182701‡
16	-0.016 -0.059	24	+0.07 -0.07	5.0	5.7	4604100
16	-0.016 -0.059	26	+0.07 -0.07	8.0	9.0	4600400
18	-0.016 -0.059	26	+0.07 -0.07	4.4	5.0	4182901‡
18	-0.016 -0.059	26	+0.07 -0.07	5.0	5.7	4604200
18	-0.016 -0.059	28	+0.07 -0.07	7.3	8.0	4547900
18	-0.016 -0.059	28	+0.07 -0.07	8.0	9.0	4600500
20	-0.020 -0.072	28	+0.07 -0.07	4.4	5.0	4183001‡
20	-0.020 -0.072	28	+0.07 -0.07	5.0	5.7	4604300
20	-0.020 -0.072	30	+0.07 -0.07	8.0	9.0	4600600
22	-0.020 -0.072	30	+0.07 -0.07	4.4	5.0	4183101‡

Ød <sub>1</sub>	TOL f <sub>9</sub>	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
22	-0.020 -0.072	35	+0.08 -0.08	10.0	11.0	4600700
22	-0.020 -0.072	40	+0.08 -0.08	10.0	11.0	4572900
22.4	-0.020 -0.072	30	+0.07 -0.07	5.0	5.7	4604400
22.4	-0.020 -0.072	32.4	+0.08 -0.08	8.0	9.0	4600800
25	-0.020 -0.072	33	+0.08 -0.08	4.4	5.0	4183301‡
25	-0.020 -0.072	33	+0.08 -0.08	5.0	5.7	4604500
25	-0.020 -0.072	35	+0.08 -0.08	8.0	9.0	4600900
25	-0.020 -0.072	35	+0.08 -0.08	10.0	11.0	4362600
25	-0.020 -0.072	38	+0.08 -0.08	8.0	9.0	4601000
25	-0.020 -0.072	38	+0.08 -0.08	10.0	11.0	4621400
25	-0.020 -0.072	40	+0.08 -0.08	10.0	11.0	4601100
26	-0.020 -0.072	40	+0.08 -0.08	9.2	10.0	4584900
28	-0.020 -0.072	35.5	+0.08 -0.08	5.0	5.7	4604600
28	-0.020 -0.072	36	+0.08 -0.08	6.5	7.1	4506201
28	-0.020 -0.072	38	+0.08 -0.08	5.6	6.3	4183401‡
28	-0.020 -0.072	40	+0.08 -0.08	10.0	11.0	4601200
28	-0.020 -0.072	43	+0.08 -0.08	10.0	11.0	4601300
30	-0.020 -0.072	37	+0.08 -0.08	6.0	7.0	4596800
30	-0.020 -0.072	40	+0.08 -0.08	5.6	6.3	4183501
30	-0.020 -0.072	40	+0.08 -0.08	6.0	7.0	4604700
30	-0.020 -0.072	40	+0.08 -0.08	8.0	9.0	4596900
30	-0.020 -0.072	40	+0.08 -0.08	10.0	11.0	4362700
30	-0.020 -0.072	45	+0.08 -0.08	10.0	11.0	4601400



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metric

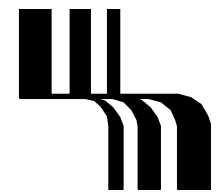
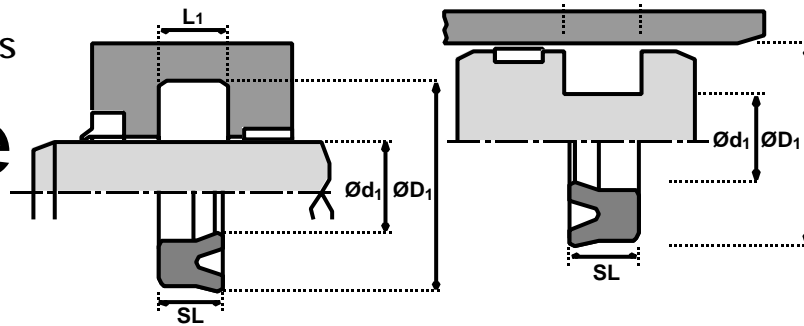
Ød <sub>1</sub>	TOL f9	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
31.5	-0.025 -0.087	41.5	+0.08 -0.08	6.0	7.0	4604800
32	-0.025 -0.087	42	+0.08 -0.08	5.6	6.3	4183601‡
32	-0.025 -0.087	42	+0.08 -0.08	6.0	7.0	4604900
32	-0.025 -0.087	42	+0.08 -0.08	10.0	11.0	4362800
32	-0.025 -0.087	47	+0.08 -0.08	10.0	11.0	4621200
35	-0.025 -0.087	45	+0.08 -0.08	6.0	7.0	4605000
35	-0.025 -0.087	45	+0.08 -0.08	7.0	8.0	4496000
35	-0.025 -0.087	48	+0.08 -0.08	10.0	11.0	4360300
35	-0.025 -0.087	50	+0.08 -0.08	10.0	11.0	4601500
35.5	-0.025 -0.087	45	+0.08 -0.08	6.0	7.0	4605100
35.5	-0.025 -0.087	50.5	+0.08 -0.08	10.0	11.0	4621100
36	-0.025 -0.087	46	+0.08 -0.08	5.6	6.3	4183701‡
38	-0.025 -0.087	48	+0.08 -0.08	6.0	7.0	4605200
38	-0.025 -0.087	50	+0.08 -0.08	9.0	10.0	4709400
38	-0.025 -0.087	55	+0.10 -0.10	9.7	11.0	4366000
38	-0.025 -0.087	58	+0.10 -0.10	9.7	11.0	4560100
40	-0.025 -0.087	50	+0.08 -0.08	5.6	6.3	4183801‡
40	-0.025 -0.087	50	+0.08 -0.08	6.0	7.0	4605300
40	-0.025 -0.087	50	+0.08 -0.08	10.0	11.0	4362900
40	-0.025 -0.087	55	+0.10 -0.10	9.9	11.0	4388500
40	-0.025 -0.087	55	+0.10 -0.10	10.0	11.0	4601600
40	-0.025 -0.087	60	+0.10 -0.10	12.0	13.0	4601700
45	-0.025 -0.087	55	+0.10 -0.10	5.6	6.3	4183901‡

Ød <sub>1</sub>	TOL f9	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
45	-0.025 -0.087	55	+0.10 -0.10	6.0	7.0	4605400
45	-0.025 -0.087	55	+0.10 -0.10	10.0	11.0	4363000
45	-0.025 -0.087	56	+0.10 -0.10	7.0	8.0	4605500
45	-0.025 -0.087	60	+0.10 -0.10	10.0	11.0	4601800
45	-0.025 -0.087	65	+0.10 -0.10	10.0	11.0	4575000
46	-0.025 -0.087	56	+0.10 -0.10	6.0	7.0	4543900
48	-0.025 -0.087	63	+0.10 -0.10	10.0	11.0	4601900
50	-0.025 -0.087	60	+0.10 -0.10	5.6	6.3	4184001‡
50	-0.025 -0.087	60	+0.10 -0.10	6.0	7.0	4605600
50	-0.025 -0.087	60	+0.10 -0.10	10.0	11.0	4363100
50	-0.025 -0.087	65	+0.10 -0.10	10.0	11.0	4602000
50	-0.025 -0.087	70	+0.10 -0.10	12.0	13.0	4602100
52	-0.025 -0.087	62	+0.10 -0.10	10.0	11.0	4559000
53	-0.030 -0.104	63	+0.10 -0.10	6.0	7.0	4605700
55	-0.030 -0.104	65	+0.10 -0.10	6.0	7.0	4605800
55	-0.030 -0.104	75	+0.10 -0.10	12.0	13.0	4602200
56	-0.030 -0.104	66	+0.10 -0.10	6.0	7.0	4605900
56	-0.030 -0.104	71	+0.10 -0.10	8.4	9.5	4184201‡
60	-0.030 -0.104	70	+0.10 -0.10	6.0	7.0	4606000
60	-0.030 -0.104	70	+0.10 -0.10	10.0	11.0	4363200
60	-0.030 -0.104	71	+0.10 -0.10	7.0	8.0	4606100
60	-0.030 -0.104	76	+0.10 -0.10	12.0	13.0	4608000
60	-0.030 -0.104	80	+0.10 -0.10	12.0	13.0	4602300

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metric



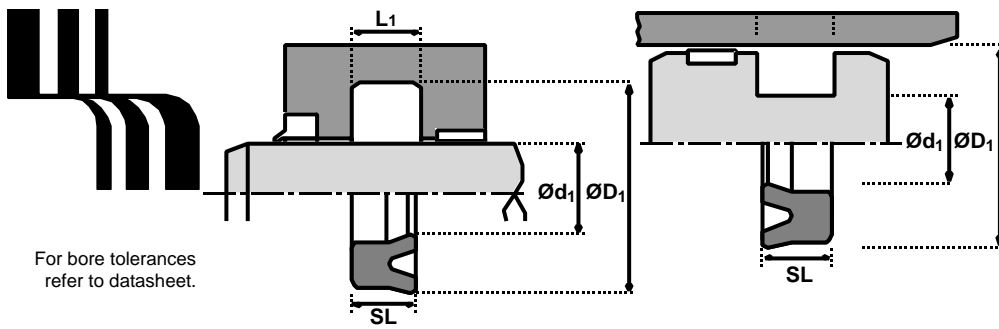
For bore tolerances refer to datasheet.

Ød <sub>1</sub>	TOL f9	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
63	-0.030 -0.104	73	+0.10 -0.10	6.0	7.0	4606200
63	-0.030 -0.104	73	+0.10 -0.10	11.8	13.0	4363300
63	-0.030 -0.104	78	+0.10 -0.10	8.4	9.5	4184301‡
65	-0.030 -0.104	75	+0.10 -0.10	6.0	7.0	4606300
65	-0.030 -0.104	80	+0.10 -0.10	8.4	9.5	4184401‡
65	-0.030 -0.104	85	+0.11 -0.11	12.0	13.0	4602400
70	-0.030 -0.104	80	+0.10 -0.10	6.0	7.0	4606400
70	-0.030 -0.104	80	+0.10 -0.10	11.8	13.0	4363400
70	-0.030 -0.104	85	+0.11 -0.11	8.4	9.5	4184501‡
70	-0.030 -0.104	90	+0.11 -0.11	12.0	13.0	4602500
70	-0.030 -0.104	92	+0.11 -0.11	12.0	13.0	4602600
71	-0.030 -0.104	80	+0.10 -0.10	6.0	7.0	4606500
75	-0.030 -0.104	85	+0.11 -0.11	6.0	7.0	4606600
75	-0.030 -0.104	85	+0.11 -0.11	11.8	13.0	4363500
75	-0.030 -0.104	95	+0.11 -0.11	12.0	13.0	4602700
75	-0.030 -0.104	100	+0.11 -0.11	22.0	24.0	4584700
80	-0.030 -0.104	90	+0.11 -0.11	6.0	7.0	4606700
80	-0.030 -0.104	90	+0.11 -0.11	8.0	8.7	4159001
80	-0.030 -0.104	90	+0.11 -0.11	11.8	13.0	4363600
80	-0.030 -0.104	95	+0.11 -0.11	8.4	9.5	4184601‡
80	-0.030 -0.104	100	+0.11 -0.11	12.0	13.0	4602800
85	-0.036 -0.123	100	+0.11 -0.11	8.4	9.5	4184701‡
85	-0.036 -0.123	100	+0.11 -0.11	8.9	10.0	4606800

Ød <sub>1</sub>	TOL f9	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
85	-0.036 -0.123	105	+0.11 -0.11	12.0	13.0	4602900
90	-0.036 -0.123	100	+0.11 -0.11	11.8	13.0	4363700
90	-0.036 -0.123	105	+0.11 -0.11	8.4	9.5	4184801‡
90	-0.036 -0.123	105	+0.11 -0.11	8.9	10.0	4606900
90	-0.036 -0.123	110	+0.11 -0.11	12.0	13.0	4603000
95	-0.036 -0.123	110	+0.11 -0.11	8.9	10.0	4607000
95	-0.036 -0.123	115	+0.11 -0.11	12.0	13.0	4603100
100	-0.036 -0.123	115	+0.11 -0.11	8.9	10.0	4607100
100	-0.036 -0.123	120	+0.11 -0.11	11.0	12.5	4184901‡
100	-0.036 -0.123	120	+0.11 -0.11	12.0	13.0	4603200
105	-0.036 -0.123	125	+0.13 -0.13	11.4	12.5	4185001‡
105	-0.036 -0.123	125	+0.13 -0.13	15.0	17.0	4603300
110	-0.036 -0.123	130	+0.13 -0.13	11.0	12.5	4185101‡
110	-0.036 -0.123	130	+0.13 -0.13	15.0	17.0	4603400
112	-0.036 -0.123	125	+0.13 -0.13	8.9	10.0	4607200
115	-0.036 -0.123	135	+0.13 -0.13	15.0	17.0	4608100
120	-0.036 -0.123	140	+0.13 -0.13	14.5	16.0	4319600
120	-0.036 -0.123	140	+0.13 -0.13	15.0	17.0	4603500
125	-0.043 -0.143	140	+0.13 -0.13	8.9	10.0	4607300
125	-0.043 -0.143	145	+0.13 -0.13	11.0	12.5	4185201‡
125	-0.043 -0.143	145	+0.13 -0.13	15.0	17.0	4603600
130	-0.043 -0.143	150	+0.13 -0.13	15.0	17.0	4603700
136	-0.043 -0.143	150	+0.13 -0.13	8.5	9.5	4607400

# Hallite 601

metric



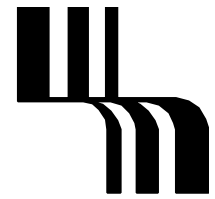
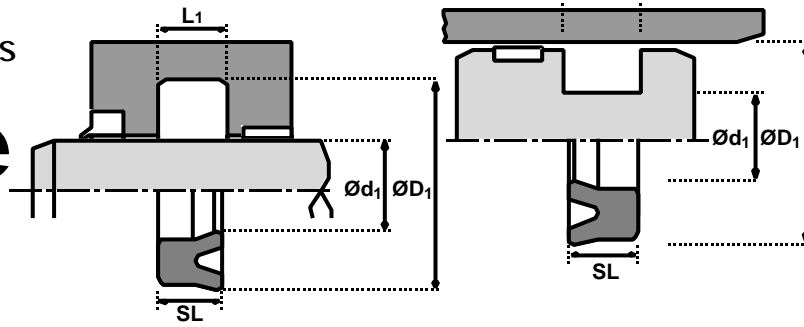
Ød <sub>1</sub>	TOL f <sub>9</sub>	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
140	-0.043 -0.143	154	+0.13 -0.13	9.0	10.0	4607900
140	-0.043 -0.143	155	+0.13 -0.13	8.9	10.0	4607500
140	-0.043 -0.143	160	+0.13 -0.13	15.0	17.0	4603800
145	-0.043 -0.143	160	+0.13 -0.13	8.9	10.0	4607600
145	-0.043 -0.143	165	+0.13 -0.13	15.0	17.0	4608200
150	-0.043 -0.143	165	+0.13 -0.13	8.9	10.0	4607700
150	-0.043 -0.143	170	+0.13 -0.13	15.0	17.0	4603900
155	-0.043 -0.143	180	+0.13 -0.13	15.0	17.0	4608300
160	-0.043 -0.143	175	+0.13 -0.13	9.0	10.0	4608400
160	-0.043 -0.143	185	+0.15 -0.15	15.0	17.0	4608500
165	-0.043 -0.143	180	+0.13 -0.13	9.0	10.0	4608600
165	-0.043 -0.143	183	+0.15 -0.15	10.0	11.0	4607800
165	-0.043 -0.143	190	+0.15 -0.15	15.0	17.0	4608700
170	-0.043 -0.143	195	+0.15 -0.15	15.0	17.0	4608800
175	-0.043 -0.143	200	+0.15 -0.15	15.0	17.0	4608900
180	-0.043 -0.143	200	+0.15 -0.15	12.0	13.0	4609000
180	-0.043 -0.143	205	+0.15 -0.15	15.0	17.0	4609100
190	-0.050 -0.165	210	+0.15 -0.15	12.0	13.0	4609200

Ød <sub>1</sub>	TOL f <sub>9</sub>	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
190	-0.050 -0.165	215	+0.15 -0.15	15.0	17.0	4609300
200	-0.050 -0.165	220	+0.15 -0.15	12.0	13.0	4609400
200	-0.050 -0.165	225	+0.15 -0.15	15.0	17.0	4609500
210	-0.050 -0.165	235	+0.15 -0.15	18.0	20.0	4609600
220	-0.050 -0.165	240	+0.15 -0.15	12.0	13.0	4609700
220	-0.050 -0.165	250	+0.15 -0.15	17.0	19.2	4426600
230	-0.050 -0.165	250	+0.15 -0.15	12.0	13.0	4609800
240	-0.050 -0.165	260	+0.16 -0.16	12.0	13.0	4621000
240	-0.050 -0.165	265	+0.16 -0.16	18.0	20.0	4609900
250	-0.050 -0.165	275	+0.15 -0.15	18.0	20.0	4610000
260	-0.056 -0.186	290	+0.16 -0.16	18.0	20.0	4620100
265	-0.056 -0.186	295	+0.16 -0.16	18.0	20.0	4620200
270	-0.056 -0.186	300	+0.16 -0.16	18.0	20.0	4620300
280	-0.056 -0.186	310	+0.16 -0.16	18.0	20.0	4620400
290	-0.056 -0.186	320	+0.18 -0.18	18.0	20.0	4620500
300	-0.056 -0.186	330	+0.18 -0.18	18.0	20.0	4620600
375	-0.062 -0.212	405	+0.18 -0.18	22.0	24.0	4620700
400	-0.062 -0.212	425	+0.20 -0.20	25.0	27.0	4620800
450	-0.068 -0.223	485	+0.20 -0.20	25.0	27.0	4620900

Rod/Piston seals

# Hallite 601

inch



For bore tolerances refer to datasheet.

Ød <sub>1</sub>	TOL f <sub>9</sub>	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.010 -0	PART No.
0.500	-0.0006 -0.0023	0.750	+0.003 -0.003	0.250	0.275	4566500
0.500	-0.0006 -0.0023	0.875	+0.003 -0.003	0.197	0.218	4300000
0.500	-0.0006 -0.0023	1.000	+0.003 -0.003	0.250	0.275	4110201
0.625	-0.0006 -0.0023	1.000	+0.003 -0.003	0.190	0.218	4298300
0.625	-0.0006 -0.0023	1.125	+0.003 -0.003	0.250	0.275	4509101
0.750	-0.0008 -0.0028	1.250	+0.003 -0.003	0.250	0.275	4102901
0.875	-0.0008 -0.0028	1.375	+0.003 -0.003	0.250	0.275	4507101
1.000	-0.0008 -0.0028	1.500	+0.003 -0.003	0.250	0.275	4111101
1.250	-0.0010 -0.0034	1.750	+0.003 -0.003	0.250	0.275	4502701
1.250	-0.0010 -0.0034	1.750	+0.003 -0.003	0.375	0.413	4107001
1.375	-0.0010 -0.0034	1.750	+0.003 -0.003	0.375	0.413	4353400
1.375	-0.0010 -0.0034	2.000	+0.004 -0.004	0.266	0.312	4236201
1.500	-0.0010 -0.0034	2.000	+0.004 -0.004	0.250	0.275	4111001
1.750	-0.0010 -0.0034	2.250	+0.004 -0.004	0.250	0.275	4502601
1.750	-0.0010 -0.0034	2.250	+0.004 -0.004	0.375	0.413	4140901
1.750	-0.0010 -0.0034	2.375	+0.004 -0.004	0.266	0.312	4236301
1.750	-0.0010 -0.0034	2.375	+0.004 -0.004	0.562	0.619	4250901
2.000	-0.0012 -0.0041	2.375	+0.004 -0.004	0.250	0.275	4508301
2.000	-0.0012 -0.0041	2.375	+0.004 -0.004	0.312	0.344	4509201
2.000	-0.0012 -0.0041	2.500	+0.004 -0.004	0.375	0.413	4353500
2.000	-0.0012 -0.0041	2.625	+0.004 -0.004	0.500	0.550	4225101

Ød <sub>1</sub>	TOL f <sub>9</sub>	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.010 -0	PART No.
2.000	-0.0012 -0.0041	2.625	+0.004 -0.004	0.562	0.619	4159801
2.125	-0.0012 -0.0041	2.500	+0.004 -0.004	0.250	0.275	4508201
2.125	-0.0012 -0.0041	2.625	+0.004 -0.004	0.375	0.413	4156101
2.250	-0.0012 -0.0041	2.750	+0.004 -0.004	0.375	0.413	4128701
2.375	-0.0012 -0.0041	3.000	+0.004 -0.004	0.312	0.344	4107201
2.500	-0.0012 -0.0041	3.000	+0.004 -0.004	0.375	0.413	4119501
2.500	-0.0012 -0.0041	3.125	+0.004 -0.004	0.312	0.344	4124401
2.625	-0.0012 -0.0041	3.125	+0.004 -0.004	0.375	0.413	4224701
2.750	-0.0012 -0.0041	3.375	+0.004 -0.004	0.562	0.619	4250701
2.875	-0.0012 -0.0041	3.500	+0.004 -0.004	0.325	0.360	4129701
3.000	-0.0012 -0.0041	3.625	+0.004 -0.004	0.562	0.619	4160001
3.750	-0.0014 -0.0048	4.500	+0.004 -0.004	0.375	0.413	4119201
4.000	-0.0014 -0.0048	4.500	+0.004 -0.004	0.511	0.562	4373400
4.000	-0.0014 -0.0048	4.750	+0.004 -0.004	0.375	0.413	4120501
4.000	-0.0014 -0.0048	4.750	+0.005 -0.005	0.536	0.600	4422500
4.500	-0.0014 -0.0048	5.000	+0.005 -0.005	0.375	0.413	4129801
4.750	-0.0017 -0.0056	5.500	+0.005 -0.005	0.360	0.437	4154701
5.000	-0.0017 -0.0056	5.750	+0.005 -0.005	0.482	0.539	4224801
5.500	-0.0017 -0.0056	6.250	+0.005 -0.005	0.375	0.413	4119301
5.750	-0.0017 -0.0056	6.500	+0.005 -0.005	0.375	0.413	4135301
7.000	-0.0017 -0.0056	8.000	+0.006 -0.006	0.500	0.550	4124901